

REMARKS

Claims 2, 3, 6-9, 11-13, 15, 23-25, 56-64, 66, 68-72, 74-80, 82-87, 89-91 and 93 remain in the present application for the Examiner's review and consideration. Claims 1, 4-5, 10, 14, 16-20, 21-22, 26-34, 35-55, 65, 67, 73, 81, 88 and 92 were previously canceled. Based on the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 102(b)

Claims 23, 56, 58, 59, 61, 66, 68-70, 78, 82, 85 and 93 are rejected under 35 U.S.C. 102(b) as being anticipated by Sidles (U.S. Patent No. 4,888,228). Claims 56, 58 and 59 are the independent claims. Applicant respectfully traverses this anticipation rejection.

The Office Action, at paragraph 3, page 2, states, "Sidles discloses a composite laminate comprising matrix bound plies having interlocked transverse fibers." (emphasis supplied.) Applicant disagrees with the Examiner, because Sidles discloses matrix-saturated plies and *not* matrix bound plies. The Examiner is invited to review column 1, lines 38-42, of Sidles, which disclose, "The improvement in delamination resistance is achieved by constructing the matrix-saturated laminates of plies." (emphasis supplied.) Further, the Examiner is invited to review the last three lines of the Sidles Abstract, which note that heat and pressure "transform the binder to a matrix which substantially saturates the plies." (emphasis supplied.) Similarly, the Examiner is invited to review column 2, lines 60-62, of Sidles, which disclose, "Upon the application of proper conditions, i.e., heat and pressure, the binder 40 sets to form a matrix which substantially impregnates the plies." (emphasis supplied.) Also, the Examiner is invited to review column 4, lines 40-49, and in particular lines 47-49, which disclose, "In general it is desired that the outer surfaces of the outermost plies are saturated in order to avoid the risk of voids in the penultimate layers." (emphasis supplied.) Additionally, the Examiner is invited to review each of the drawings, which all depict that binder 40 forms a matrix that saturates plies 15, 20. Because the literal teaching of Sidles reveals "matrix-saturated plies," all the fibers in the Sidles composite are covered with adhesive.

The Office Action, at paragraph 12, attempts to rebut the aforementioned argument by stating, "Sidles clarifies that he is interested in impregnating the fibers that are located between the plies and the adhesive is 'sandwiched' between the plies (col. 2, lines 60-65)." However, the cited passage actually teaches a matrix that substantially impregnates the plies (Sidles, col. 2,

lines 61-62). Further, a person having ordinary skill in the art would interpret the passage's reference to a "binder 40 located between the plies" (Sidles, col. 2, lines 62-64) to mean that the matrix fills the spaces between the plies, if any, in addition to substantially impregnating the plies themselves.

The Examiner also takes the position that Sidles, column 1, lines 40-49, discloses that the adhesive layer is thermally set and at least partially penetrates into the fibrous face layer. However, column 1, lines 40-49, of Sidles makes no such statement whatsoever.

The Examiner states in paragraph 3 on page 3 of the Office Action that

The figures of Sidles illustrate the top portion of the fibrous face layer as being embedded in polymeric adhesive. However, Sidles teaches that only at least one side needs to be coated with binder and that when a plurality of plies are stacked together there is binder between layers. Therefore, the top portion of the fibrous layer may be substantially free of adhesive.

The Applicant respectfully disagrees with the Examiner's statements. First, the statement asserting "that when a plurality of the plies are stacked together there is binder between layers" is applicable only during the binder application process in Sidles and not in the final heated/pressed form. Second, the fact that there may be "binder between layers" does not mean there is no binder in the outer layer(s). Third, from the Examiner's interpretation of Sidles, one simply cannot draw the conclusion that "the top portion of the fibrous face layer is substantially free of adhesive," because, as discussed above, Sidles forms a matrix-saturated composite, and thus the fibrous outer layer is not permitted to be free of adhesive. In furtherance of his position, the Examiner points to the first example and claim 1 set forth in Sidles (see paragraph 10 of the Office Action), but these supports are inapposite. The plies or layers in Example 1 are covered with a "pre-preg" both on top and bottom, before any heat and pressure are applied. Further, claim 1 says nothing about leaving fibers in outer layers free of adhesive in the final composite.

For all the reasons above, independent claims 56, 58 and 59 are novel and patentable over Sidles. Claims 23, 61, 66, 68-79, 78, 82, 85 and 93 depend upon allowable claims 56, 58 or 59 and add further limitations, and are patentable for that reason alone. Applicant reserves the right to further support the patentability of these dependent claims, should that become necessary.

In view of the aforementioned remarks, Applicant respectfully requests that the rejections under Section 102(b) be withdrawn.

Rejections under 35 U.S.C. § 103(a)

Claims 64 and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sidles. Claims 64 and 91 are independent claims. The Examiner acknowledges that Sidles fails to explicitly disclose the depth in which the adhesive layer penetrates the fibrous face layer as recited in said claims, but asserts that said depth is a result-effective variable affecting the strength of the composite. Applicant believes that claims 64 and 91 are patentable over Sidles for the reasons discussed above in the discussion of the 35 U.S.C. 102(b) rejections. Further, the Examiner supports his position by citing Sidles, column 3, lines 14-45, but such a citation is inapposite because these lines do not mention anything about adhesive or adhesive penetration. For all these reasons, independent claims 64 and 91 are patentable over Sidles.

Claims 8, 9, 57, 60, 62, 74, 76 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sidles in view of Ladeur (EP 0 547 533). Claim 57 is the independent claim. The Examiner acknowledges that Sidles fails to teach or suggest the use of gathered fabrics in the fibrous face layer, but states that Ladeur teaches gathered fabrics. Applicant believes that claim 57 is patentable over Sidles for the reasons discussed above in the discussion of the 35 U.S.C. 102(b) rejections. Further, Ladeur does not teach gathered fabrics. The Examiner equates consolidated fabrics with gathered fabrics, but there is no equivalence between the two types of fabric, because “consolidated” means pressed down and not gathered sidewise. For all these reasons, claim 57 is patentable over Sidles in view of Ladeur. Claims 8, 9, 60, 62, 74, 76 and 77 depend upon allowable claim 57 and add further limitations, and are patentable for that reason alone. Applicant reserves the right to further support the patentability of these dependent claims, should that become necessary.

Claims 2, 3, 6, 7, 63, 71, 72, 75, 79, 80, 83, 84, 86, 87 and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sidles in view of Sissons (US 3,347,736). All of these claims depend upon independent claims 56, 57, 58, or 59, which as discussed above are allowable, and thus the dependent claims are patentable for this reason alone. The Examiner acknowledges that Sidles fails to teach or suggest a specific needling density. However, Sissons does not overcome the deficiencies of Sidles, and in particular, Sissons does not disclose a needled-face or adhesive as recited in the independent claims. Thus, dependent claims 2, 3, 6, 7, 63, 71, 72, 75, 79, 80, 83, 84, 86, 87 and 90 are patentable over Sidles in view of Sissons. Applicant reserves the right to further support the patentability of these dependent claims, should that become necessary.

Claims 11, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sidles and Ladeur further in view of Zafiroglu *et al.* (US 6,269,759). All of these claims depend upon independent claim 57, which as discussed above is allowable over Sidles in view of Ladeur, and thus the dependent claims are patentable for this reason alone. The Examiner acknowledges that the disclosures of Sidles and Ladeur are silent as to the stitch bonded and bulked fabrics in the fibrous outer layer. However, Zafiroglu *et al.* does not overcome the deficiencies of Sidles and Ladeur, and in particular, Zafiroglu *et al.* discloses stitched yarn loops and not gathered sheet loops as recited in claim 57. Thus, dependent claims 11, 12 and 15 are patentable over Sidles and Ladeur further in view of Zafiroglu *et al.* Applicant reserves the right to further support the patentability of these dependent claims, should that become necessary.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sidles, Ladeur and Zafiroglu further in view Murata *et al.* (US 4,576,840). Claim 13 depends upon independent claim 57, which as discussed above is allowable over Sidles in view of Ladeur, and thus the dependent claim is patentable for this reason alone. The Examiner acknowledges that Sidles, Ladeur and Zafiroglu *et al.* are silent as to the stitch-bonded and bulked fabrics in the fibrous outer layer. However, Murata *et al.* does not overcome the deficiencies of Sidles, Ladeur and Zafiroglu *et al.*, and in particular, Murata *et al.* discloses that shrinkable fibers blended within yarn cause the yarns to bulk-up and not the fabric to gather and bulk. Thus, Murata *et al.* is totally unrelated to claim 13. Thus, dependent claim 13 is patentable over Sidles, Ladeur, and Zafiroglu *et al.* further in view of Murata *et al.* Applicant reserves the right to further support the patentability of this dependent claim, should that become necessary.

Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sidles in view of Allison *et al.* (US 2003/0099810). Claims 24 and 25 depend upon independent claim 56, which as discussed above is allowable over Sidles, and thus the dependent claims are patentable for that reason alone. The Examiner acknowledges that Sidles fails to teach or suggest the use of a spunlaced fabric for the fabric layer, through which the fabric is needled. However, Allison *et al.* does not overcome the deficiencies of Sidles, and in particular, Allison *et al.* discloses the use of a pre-formed spunlaced fabric in the backing whereas the face layer is formed with yarn. By contrast, claims 24 and 25 claim that the face layer is spunlaced. The present application uses the spunlacing process to form the loops. Thus, dependent claims 24

and 25 are patentable over Sidles in view of Allison *et al.* Applicant reserves the right to further support the patentability of these dependent claims, should that become necessary.

In view of the aforementioned remarks, Applicant respectfully requests that the rejections under Section 103(a) be withdrawn.

Conclusion

In light of the preceding, Applicant believes that the presently pending claims are in condition for allowance, early notice of which would be greatly appreciated. The Examiner is invited to telephone the undersigned attorney of record if he believes that such a call would materially advance the prosecution and eventual allowance of the present application.

It is not believed that any fees are required with the submission of this response. However, if any fees are due, the Commissioner may charge appropriate fees to The H.T. Than Law Group, Deposit Account No. 50-1980, and if any extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a).

Respectfully submitted,

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